ABSTRACT

Background :

Impaction refers to failure of eruption of teeth into their proper functional position. Third molars are the most common tooth to get impacted. One of the commonest reasons for occurrence of third molar impaction is insufficient space which might further lead to various pathologic lesions like pericoronitis cystic lesions, neoplasm,root resorption and can cause detrimental effects on adjacent tooth Major theories explaining reasons for occurrence of the tooth impaction also stresses on the concept of discrepancy between the tooth and jaw size. The present study was conducted to evaluate the angulation,type of impaction,level of eruption and third molar space of impacted third molars using digital panoramic radiograph.

AIMS AND OBJECTIVES :

To evaluate the incidence of third molars,impaction status,level of eruption and molar space using digital panoramic radiographs among the patients visiting Ragas Dental College and Hospital.

OBJECTIVES OF THE STUDY :

- Subjects are clinically examined and panoramic radiographs should be taken for each subject.
- The clinical status of all molars should be recorded as unerupted (not at all visible),partially erupted (occlusal surface partially visible), erupted (occlusal surface completey visible) or missing.

- The radiographs should be examined for the following variables :
    1. Root development of the molars,that is complete formation,two third formation.
    2. Inclination of molars in degrees (vertical ± 10° mesioangular and distoangular ±11 to 70°,horizontal > 70°
- Level of eruption : The depth of the third molar in relation to the adjacent second molar was assigned to 1 to 3 groups
    1. Level A : The highest part of the third molar should be on the same level or above the occlusal plane of adjacent second molar
    2. Level B : The highest part of the third molar was below the occlusal plane but above the cervical line of second molar.
    3. Level C : the highest part of the third molar was beneath the cervical line of second molar.
- Third molar space : measured as the distance between the distal surface of second molar crown and anterior border of the ramus on the occlusal plane in proportion to the width of third molar crown.

METHODOLOGY :

Patients in the age range of 17-25 years who are visiting the outpatient department, Ragas Dental College were selected for the study after completion of the clinical examination. The selected patient's digital panoramic radiographs were taken in the Oral Radiology Department, Ragas Dental College, Uthandi, Chennai- 600041,after duly taking their consent.

One fifty digital panoramic radiographs were selected subsequently, which were of good quality regarding patient positioning, film density and contrast. Images that did not achieve these predetermined requirements were not included in the study.

Radiographic measurements which includes angulation, third molar space were measured by using SCANORA software, whereas level of eruption and root completionwere recorded by observation of orthopantomograph.

All parameters including age, sex and dental status of the patients were recorded in a excel sheet format.

The criterias used for measurement of these parameters are given below :

1) The angulation was measured by the angles formed between the long axis of the second and impacted third molars. Inclination of molars in degrees (vertical ± 10°,mesioangular and distoangular ±11° to 70°, horizontal > 70°).

2) Root development of the molars

a. Two third root formation

b. Complete root formation

3) Level of eruption : The depth of the third molar in relation to the adjacent second molar was assigned to 1 to 3 groups.

a. Level A : The highest part of the third molar should be on the same level or above the occlusal plane of adjacent second molar.

b. Level B : The highest part of the third molar was below the occlusal plane but above the cervical line of second molar.

c. Level C : The highest part of the third molar was beneath the cervical line of second molar.

4) Third molar space was measured by the distance between the distal surface of second molar crown and anterior border of the ramus on the occlusal plane in proportion to the width of third molar crown.

Results :

The present study showed that mesioangular impaction was the most common type of impaction with higher angulation which showed a less significant difference in females and males in angulation of impacted third molar considering $p < 0.056$.The present study showed that two third and complete rootformation was higher in males than females.The present study showed that the most common level of eruption was level A followed by level B and level C. The present study showed highly statistically significant results in eruption level with sexual distribution of impacted third molars

considering the p value, $p < 0.024$.The present showed the third molar space was more in males than in females.

Conclusion : .

The type of angulation was used to measure the type of angulation and how the root formation influence the type of impaction and angulation status of impacted third molar. Level of eruption was used to determined the depth of the impacted third molar which can used to determine the eruption status. Third molar space was used to determine the

growth of mandible and the jaw space which can be used to determine the type and status of eruption.

KEYWORDS : Impaction, Molar, Panoramic radiograph.